# Consumer Information, Performance Reporting, and Component Labeling Requirements

***(for IEC 62257-9-8)***

*Version 2.1*

*July 2026*

This document provides guidelines for performance reporting requirements for all products that meet the Quality Standards[1]. The performance-reporting framework provides buyers throughout the supply chain with standardized information about key metrics to make purchasing decisions, while allowing manufacturers and suppliers the flexibility to provide this information in innovative and product-specific ways.

The performance reporting requirements are included as part of the IEC TS 62257-9-8 Quality Standards so that any product supported by the program will need to adhere to the reporting policy.

## Policy Guidelines

All manufacturers are required to accurately present performance metrics on product packaging and other relevant consumer-facing materials to enable retail buyers and distributors to compare products and make educated choices. In addition, specific components such as PV modules and batteries must be labeled with required information, which should match the information in consumer-facing materials (see Table 4 for more information). Requirements vary by product type—pico or SHS—and include information on where specifications must appear. For components that are packaged in the kit, all information must appear on the packing or in the user manual for the kit. For components that are packaged separately from the kit (common for the components of product families), information must appear on the packaging or in the user manual for the component. Specific details appear in the table on the following pages:

[1] In this document, the term Quality Standards refers to IEC 62257-9-8. See the Change Log for Quality Standards for details on new requirements and the differences between the Standards.

**Table 1. Design requirements for reporting in IEC TS 62257-9-8**

| **Design Requirements** | |
|---|---|
| **Requirements for reporting** | |
| **Content** | All information shall be presented in a clear, unambiguous manner. Elements shall not be misleading. |
| | The information shall have at least the same prominence as the other messages on the packaging or other location where the information is presented. |
| | The label or information shall be sized such that:<br>• Any graphics are clearly visible<br>• The font used must have a cap height of at least 2.2 mm for all information reported in the Latin alphabet. |
| | There shall be sufficient contrast between the text or graphics and background to be clearly legible. |
| **Location** | The information may be printed on the packaging or on a document inside the packaging, if the packaging can be opened prior to purchase. |
| | If the information is inside the packaging, it shall be possible to open the packaging and access the information without altering the packaging, unless the information in its entirety is legible from the exterior of the packaging. |
| | If information is provided inside the packaging, but the packaging is taped shut or otherwise sealed prior to purchase, companies shall work with distributors and retailers to ensure the information can still be presented to the customer prior to purchase. |
| | The information shall be included on or in the packaging in physical, human-readable form. Information available only on a website, brochure, catalogue, or other documentation not included on or in the packaging is not sufficient. |

**Table 2: Design requirements for truth in advertising in IEC TS 62257-9-8**

| **Design Requirements** | |
|---|---|
| **Truth in Advertising** | |
| All requirements in this table are subject to all design requirements in **Table 1**. | |
| **Reporting Requirements** | |
| The below requirements are for **both** Size A and B products: | |
| **Performance Reporting** | |
| **Advertised values and performance tolerances** | It is always acceptable if actual performance is better than advertised. |
| | Luminous flux shall deviate no more than 15% from advertised values. |
| | All other numeric aspects from IEC TS 62257-9-5, such as run time, time to charge, and PV power, shall deviate no more than 10% from advertised values. |
| | The tolerances described above are applicable to all values within a range if a range is provided. |
| | The name of the metric and the units must be included. |
| **Advertised appliances requirements** | Runtimes for appliances that are not included with the product must clearly indicate that the appliance is not included. |
| | Power consumption or battery capacity of any advertised appliance must be included on the advertisement and be representative of actual appliances that can be found in the market. |

# Design Requirements

## Truth in Advertising

### Information and Performance Reporting

The below requirements are for **both** Size A and B products:

#### Branding

| | |
|---|---|
| **Company name** | Required for all products.<br>Note: The Company name or Brand Name, product name(s) and model number(s) on the packaging of the sampled product(s) will be the name(s) and model number(s) used on the test report, Standardized Specification Sheet and VeraSol certificate. |
| **Model number** | |
| **Kit Contents** | All products shall have a method of indicating to the consumer what components and appliances are included with the product. |
| | The description of contents shall be on the packaging, user manual, user agreement, or separate documentation presented at the time of purchase. |
| | A set of checkboxes that are manually marked to indicate which (and how many) of the potential components are included is an acceptable way to indicate product contents.<br>If a company uses the same packaging for all kits in a family, a note shall be included on the packaging, user manual, user agreement, or separate documentation presented at the time of purchase that states that the contents of the kit may vary. See **Appendix A** for example checklist. |

#### Information and performance reporting by component

| | |
|---|---|
| **Batteries**<br>• Battery chemistry<br>• Battery capacity (Ah, mAh, or Wh)<br>• Nominal voltage (V) | If the component is packaged with the kit, the information shall be presented on the packaging or in the user manual of the kit. If the component is packaged separately from the kit, the information shall be presented on the packaging or in the user manual of the component.<br>The requirements for lighting appliances do not apply to accessory lights.<br>For all products, solar run time and daily energy service, if advertised, shall be based on a solar |
| **Lighting appliances with batteries** *(excluding main units)*<br>• Luminous flux (lumens)<br>• Appliance full battery run time for | |

| Design Requirements | |
|---|---|
| **Truth in Advertising** | |
| the brightest setting (hours) | resource of 5 kWh/m$^2$.<br>Alternative values of solar resource may be advertised; the solar resource in kWh/m$^2$ used to must be clearly indicated. |
| **Lighting appliances without batteries** *(including lighting appliances built into main units)*<br>• Luminous flux (lumens) | |
| **Appliances with batteries**<br>• Battery chemistry<br>• Battery capacity (Ah, mAh, or Wh)<br>• Nominal voltage (V) | |
| **Products without PV modules** | |
| **Products charged from grid or external DC power supply** | |
| Full-battery run time | Reported instead of solar run time. |
| Time required for a full charge from the grid or DC power supply | n/a |
| **Products charged from electromechanical charging** | |
| Run time from a specified quantity of electromechanical charging | The description of the electromechanical run time shall provide sufficient information for the user to understand the amount of mechanical work input required. |

## Design Requirements

### Truth in Advertising

The below are requirements for **Size A Products (Pico Products, <10.5 W PV power)**:

| | |
|---|---|
| Luminous flux (lumens) and daily solar run time | The luminous flux and solar run time shall be reported for lights on their brightest setting. |
| | The luminous flux and solar run time may be presented in any of the following ways[2]:<br>• A single value of luminous flux and combination solar run time reported for the main lighting (all lights that are powered directly from main unit(s)).<br>• A single value of luminous flux and combination solar run time reported for all included lighting appliances, including lighting appliances with their own batteries (often referred to as torches, portable lamps, or lanterns).<br>Luminous flux and solar run time reported for each lighting appliance individually. |
| | Additional luminous flux or solar run time values may be reported for appliances used separately or in combination, provided that each run time value is clearly associated with the corresponding luminous flux value. Misleading or ambiguous advertisements that misrepresent the relationship between the luminous flux and run time are not permitted. |
| | Products with multiple batteries can have multiple values of solar run time, one for each battery. |
| | Companies may also present comparative measures of brightness, though they shall also report the value in lumens. In cases where companies or distributors choose to provide comparative measures of brightness in addition to reporting the value in lumens, comparisons shall be standardized to reflect the light output as reported in lumens.<br>Allowable equivalents include:<br>• 1 candle or 1 kerosene wick lamp = 10 lm<br>• 1 hurricane lamp = 40 lm<br>• Incandescent lamp (bulb) = 900 lm (this is based on a 60 W lamp)<br>Compact fluorescent (CFL) lamp (bulb) = 900 lm (this is based on a 13 W lamp)[3] |

[2] Only portable lights brighter than 15 lumens are required to have their brightness and solar run time reported. Components considered to be non-lighting appliances, such as torches with light output ≤15 lumens and radios, do not need to state their solar run time, but their qualitative impact on the runtime must be noted as described in the table.

[3] These values are based on a range of literature sources, including:

| **Design Requirements** | |
|---|---|
| **Truth in Advertising** | |
| Impact of mobile phone/other auxiliary appliance(s) charging on performance qualitatively described | Pico products that offer or advertise mobile phone charging or other auxiliary services (such as a radio) must add an informational element in the consumer-facing packaging (text or graphic) that describes the effect of mobile phone charging and any other included service on product performance. This does not need to be quantitative, but it is intended to ensure that the consumer is aware of the tradeoff between using the available stored energy for lighting. |
| The below are requirements for **Size B Products (Solar Home Systems, ≥10.5 W PV power)**: | |
| Daily solar run time reporting | Solar run time reporting is required by fulfilling one of the following options:<br>One solar run time profile stating solar run times for all the included light points on high and the included or advertised appliance having the greatest power consumption, when used in combination. Other appliances (included or advertised) may be included in this profile but are not required. See **Appendix B**, **Figure 2** for example solar run time profile.<br>Two solar run time profiles:<br>• The solar run time for the included light points on high, used in combination.<br>• Separately, the solar run time for the included or advertised appliance having the greatest power consumption, used individually.<br>See **Appendix B**, **Figure 3** for example solar run time profile.<br>If a company uses the same packaging for all kits in a family, a note shall be included on the packaging, user manual, user agreement, or separate documentation presented at the time of purchase that states that the run times may vary. |

- Mills, E. (2003). Technical and economic performance analysis of kerosene lamps and alternative approaches to illumination in developing countries. Lawrence Berkeley National Laboratory. https://escholarship.org/uc/item/42j7337w
- van der Plas, R. and A. de Graaff. (1988). A comparison of lamps for domestic lighting in developing countries. Industry and Energy Department Working Paper, Energy Serices Paper No. 6.
- Nieuwenhout, F., P. van de Rijt, and E. Wiggelinkhuizen. (1998). Rural lighting services: A comparison of lamps for domestic lighting in developing countries. Energieonderzoek Centrum, Netherlands.

Note: the hurricane lamp refers to an unpressurized lamp; pressurized mantle lamps can provide upward of 500 lm of light.

| Design Requirements | |
|---|---|
| **Truth in Advertising** | |
| | Advertised appliances included in combinations may be generic types (e.g. television, portable radio, 20 cm fan) or specific products. If specific appliances are advertised, sufficient information, such as a model number or distinctive product name, shall be provided so that the end user can identify the appliance. |

Design Requirement Additional Notes:

1. As noted above, PV modules (other than modules integrated into another component) and all batteries, including those used in main units and accessories such as torches and radios, must be labeled with certain specifications. These specifications vary by the product size.
2. As noted in the Quality Standards, products must offer and present a consumer-facing warranty. The consumer-facing warranty is subject to the design requirements for both content and location as described in **Table 1**. As per the existing requirements outlined in the Quality Standards, the warranty must meet the following conditions, as specified in the table below.
3. Note that this is a *minimum* standard and it is up to the discretion of manufacturers and distribution partners to exceed the basic protection offered in these terms to differentiate their products from others that are available in the market.

**Table 3: Design requirements for consumer information in IEC TS 62257-9-8**

| **Design Requirements** | |
|---|---|
| **Consumer Information Requirements** | |
| All requirements in this table are subject to all design requirements in **Table 1** and **Table 2.** | |
| **Warranty** | |
| The below requirements are for **both** Size A and B products: | |
| Minimum coverage | The warranty must cover, at a minimum, manufacturing defects that impede operation under normal use and protection from early component failure. |
| Access requirements | Explains how the consumer can access the warranty (e.g. return the product to point of purchase/distributor/service centre, call or SMS a number, etc.).<br>Details about how the warranty will be executed (e.g. repair, replacement, etc.). |
| | The warranty should also advise the customer to inquire about the warranty terms prior to purchase (not required). |
| Availability | The warranty shall be available to the consumer in writing in a way that enables the end user to verify and understand the terms of the warranty prior to purchase. |
| The below are requirements for **Size A Products (Pico Products, <10.5 W PV power)**: | |
| Minimum coverage period | The minimum warranty period from the time of purchase by the end user shall be at least one year. |
| Minimum coverage | The warranty shall cover the entire product, including the battery. |

# Design Requirements

## Consumer Information Requirements

The below are requirements for **Size B Products (Solar Home Systems, >10.5 W PV power)**:

| | |
|---|---|
| **Main system components** *(PV module, control box, cables, and lights)* | The minimum warranty period from the time of purchase by the end-user shall be at least two years. |
| | The battery warranty is assumed to include a capacity retention figure of at least 80 % at two years, benchmarked to the advertised battery capacity. |
| **Subsystem components** *(Lighting appliances that include their own batteries, all non-lighting appliances, all appliance batteries, USB charging adaptors and similar accessories)* | The minimum warranty period from the time of purchase by the end-user shall be at least one year. |

## Date of Manufacture

The below requirements are for **both** Size A and B products:

| | |
|---|---|
| Reporting requirements | All products shall be labelled with the date of manufacture with the precision of at least the month and the year; alternatively, a serial number, batch number, date code, or equivalent marking assuring traceability of date of manufacture may be provided. |
| | The date of manufacture shall be reported with a precision of at least the month and year. |
| | If components are packaged separately, each component shall carry these component-specific markings. |
| Encoded dates of manufacture *(if applicable)* | If the date is encoded in a serial number, the key must be provided. |
| | The date may be encoded as a barcode, provided that it is a standard symbology that can be read by publicly available software on a smartphone. |
| | If the barcode points to a webpage, the date or code shall be clearly displayed at the URL encoded in the barcode and the user shall not be required to conduct any additional steps to retrieve the information. |

| | |
|---|---|
| **Design Requirements** | |
| **Consumer Information Requirements** | |
| **User Instructions** | |
| The below are requirements for **Size B Products (Solar Home Systems, >10.5 W PV power)**: | |
| Connecting the PV module to the unit for charging. | If the business model of a company is to exclusively install products using trained and authorized technicians, then consumer-facing installation instructions may be omitted. In this case, the company shall provide the training manual or instructions given to the technicians, which shall contain the elements listed in this subclause. The product shall still include a user manual covering basic operation instructions for the consumer. |
| Instructing the user not to shade the PV module. See **Appendix C** for an example user manual with user instructions. | |
| Facing the PV module surface toward sun. See **Appendix C** for an example user manual with user instructions. | |
| Making all required permanent connections. See **Appendix C** for an example user manual with user instructions. | |
| Connecting all included and advertised appliances. See **Appendix C** for an example user manual with user instructions. | |
| Interpreting the battery state-of-charge indicator or other instructions related to determining and understanding the battery state of charge. See **Appendix C** for an example user manual with user instructions. | |
| Any pre-use steps are necessary for the product to properly function (e.g. fully charge battery before initial use, insert supplied fuse, how to operate the PAYG system). See **Appendix C** for an example user manual with user instructions. | |
| **Replaceable fuses used in circuit protection** | |
| Size of the fuse | Required in accordance with Table 1. |

# Design Requirements

## Consumer Information Requirements

### Replacement Methods

The below are requirements for **Size B Products (Solar Home Systems, >10.5 W PV power)**:

| | |
|---|---|
| Component replacement labeling | One of the three following statements are required:<br>• State that components can be replaced and provide any specifications necessary for a PV module, battery, light, or fuse to function with the system. The purpose of this option is to enable a user or technician to be able to reasonably find a replacement if a key component of the system fails.<br>• Provide directions as to how the consumer can get components, including the battery, replaced at service centres.<br>Include a clear consumer-facing statement that the batteries and other components are not replaceable. |
| Battery replacement labeling | One of the three following statements are required:<br>• Battery is field replaceable<br>• Battery may be serviced by manufacturer<br>• Battery is not replaceable |

**Table 4: Component labeling requirements in IEC TS 62257-9-8**

| **Design Requirements** | |
|---|---|
| **Component Labeling Requirements** | |
| The requirements in this table are not subject to the design requirements of **Table 1**. The requirements in this table must appear **on the component itself**. | |
| **PV module label** *(all PV modules)* | |
| Name, registered trade name or registered trademark of company | All electrical ratings shall be compared to measurements made at standard test conditions (1000 W/m$^2$, 25°C, air mass index 1,5 according to IEC TS 61836), but ratings at other test conditions (NMOT, etc.) may be included in addition to those at STC. |
| Type or model number designation | |
| Open-circuit voltage ($V_{OC}$) | |
| Short-circuit current ($I_{SC}$) | |
| Maximum power ($P_{mpp}$) | |
| **PV module label** *(flexible PV modules only)* | |
| Minimum radius of curvature | If the module can be bent in multiple directions, the minimum radius of curvature for each direction. |
| **Battery label** | |
| Battery capacity (Ah, mAh, or Wh) | Required for all batteries |
| Nominal voltage (V) | Required for all batteries |
| **Replaceable fuses used in circuit protection** | |
| Size of the fuse | Required for all replaceable fuses |

**Table 5: Ports labeling requirements in IEC TS 62257-9-8**

| **Design Requirements** |
|---|
| **Ports Labeling Requirements** |
| The requirements in this table must appear on the component itself **OR** meet the design requirements of **Table 1**.<br>Requirements designated with a ***** must be reported together in the same location. |
| **Non fast-charging ports** |
| Maximum power (W); **OR**<br>Maximum current (A or mA) |
| Nominal voltage (V); **OR**<br>Voltage range (V) |
| **USB ports that advertise fast charging support** |
| Maximum power (W) |
| Nominal voltage; **OR**<br>Voltage range (V) |
| **USB inputs with a current > 5 A required to charge the product within the advertised charging time** |
| Current (A or mA); **OR**<br>Power (W)***** |
| **USB inputs that supports fast charging is required to charge the product within the advertised charging time** |
| Power (W)***** |
| Fast charging protocol***** |
| **Non-USB DC inputs** |
| Current (A or mA)***** |
| Input Voltage (V)***** |

| Design Requirements | |
|---|---|
| **Ports Labeling Requirements** | |
| **Ports not intended to supply power** | |
| Declaration that port not intended for power supply | Examples of phrases that may be used to meet this requirement include:<br>• Not for mobile charging<br>• Not intended for powering or charging devices<br>• Not intended for powering or charging appliances<br>• For *[specific function]* only |

These requirements are considered part of the Quality Standards, and product packaging will need to comply with the performance reporting requirements prior to meeting the Quality Standards and being eligible for VeraSol program support. Not meeting the performance reporting requirements will be treated as a "Conditional Pass Pending Correction" as described in the VeraSol Conditional Pass Policy.

## Conclusion

This performance reporting policy is intended to ensure that all those making purchasing decisions in the market have access to the necessary information to make well-informed decisions. Further, the policy is designed to allow manufacturers and other suppliers with the ability to provide this critical information in whatever way best suits their product design, product attributes, and marketing plans.

# Appendix A

| Kit Contents | |
|---|---|
| Main Unit Battery (LiFePO4) | ☐ 6 Ah 12.8 V ☒ 12 Ah 12.8 V |
| PV module | ☐ 10 W ☐ 15 W ☒ 20 W ☐ 25 W |
| Lighting | ☒ 3x 1 W 100 lm lamp ☒ 1x 3 W 300 lm tubelight ☐ 3x 2 W 200 lm lamp |
| Appliances | ☒ 70 lm 600 mAh Torch ☒ 1500 mAh Radio |
| TV | ☐ 24” ☒ 32” |
| PAYG | ☒ |
| Contents may vary. See checklist above. | |

**Figure 1: Example kit component list consisting of a set of checkboxes that are manually marked to indicate which, and how many of the potential components are included in a kit. This table indicates that the kit includes one 12 Ah 12.8 V main unit, one 20 W PV module, three 1 W 100 lm lamps, one 3 W 300 lm tubelight, one torch, one radio, and one 32” TV. It is also PAYG enabled.**

# Appendix B

| | | |
|---|---|---|
| Solar Run Time Combination* | 3x 1 W lamp | 19 hours |
| | 1x 3 W tubelight | 19 hours |
| | Torch | 6.5 hours |
| | Radio | 8 hours |
| | 32" TV | 20 hours |
| *Solar run times based on typical use per standard solar day of charging | | |

**Figure 2: Example solar run time profile consisting of all included appliances.**

| | | |
|---|---|---|
| Solar Run Time Profile* | | Run time |
| | All included lights on high | 30 hours |
| | 32" TV | 25 hours |
| *Solar run times based on typical use per standard solar day. | | |

**Figure 3: Example solar run time profile that includes all lights on high and an additional solar run time profile that includes the appliance with the highest power consumption individually.**

# Appendix C

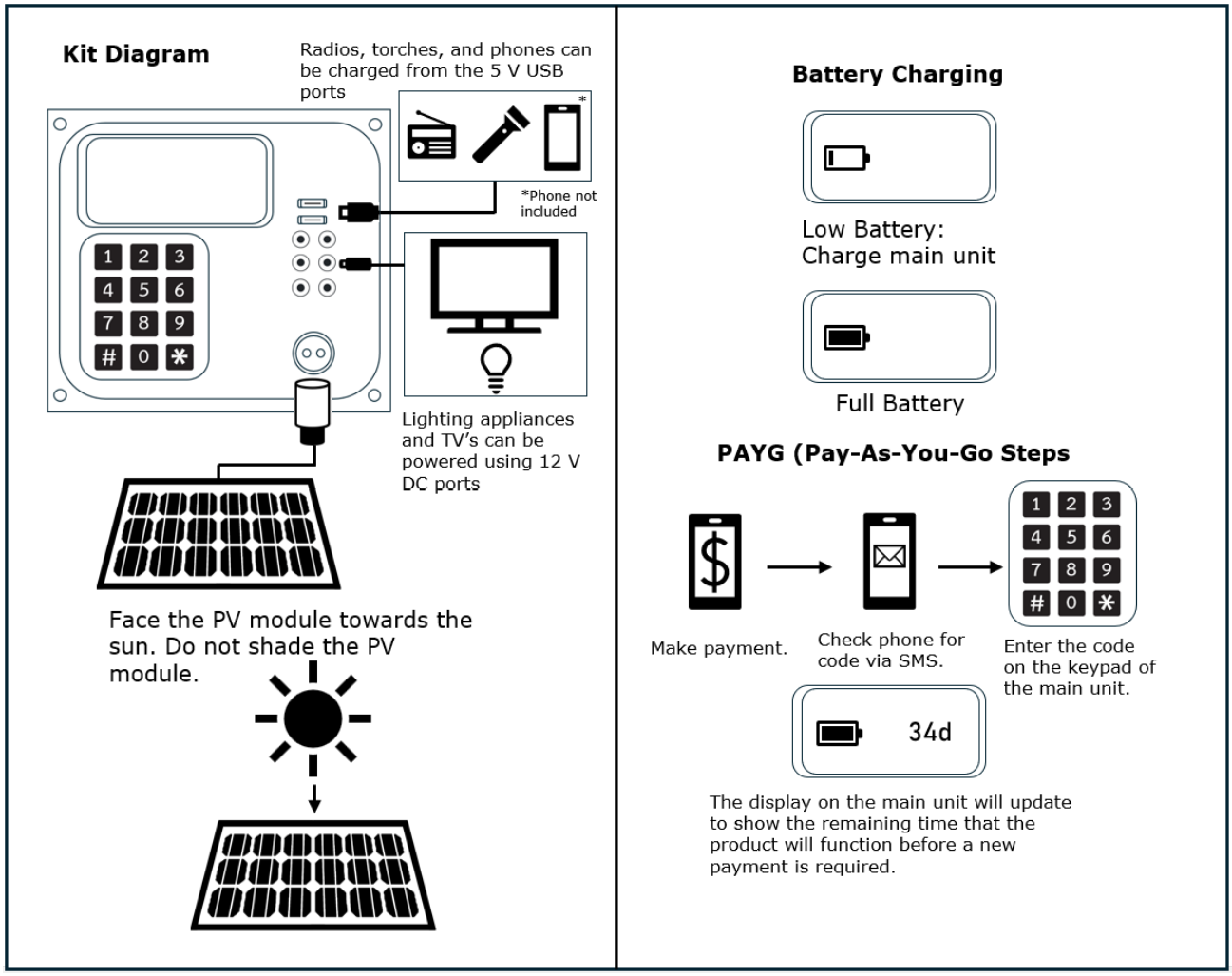


**Figure 4: Example user manual/User instructions with the required guidance on how to connect the PV module and all advertised appliances to the main unit. Additionally, this example includes guidance to face the PV module towards the sun, not to shade the PV module, on how to interpret battery status indicators, and on PAYG functionality.**

# About VeraSol

An evolution of Lighting Global Quality Assurance, the VeraSol program supports high-performing, durable off-grid products that expand access to modern energy services. VeraSol builds upon the strong foundation for quality assurance laid by the World Bank Group and expands its services to encompass off-grid appliances, productive use equipment, and component-based solar home systems. Like Lighting Global Quality Assurance, the VeraSol program is managed by CLASP in collaboration with the Schatz Energy Research Center at California State Polytechnic University, Humboldt. Foundational support is provided by the World Bank Group's Lighting Global program, UKaid, IKEA Foundation, Good Energies Foundation, and others.

Please visit VeraSol.org for more information.